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RADIO AND SPECIAL WIRELESS SERVICES OF YUGOSLAVIA

8 January 1944

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71. Radio and Special Wireless Services. (Fig. VII-1)

Yugoslavia before the war had several powerful broadcasting stations and a number of low-power point-to-point stations, coastal radio facilities at the two principal ports, and five aeronautical stations. The radio system has unquestionably been much expanded and altered since the Axis invasion, but detailed information on this development is incomplete and unreliable. It may be assumed that all peacetime functions have been abandoned and all the older stations adapted to Axis needs, while new stations have been installed to perform the strategic and propaganda functions which the pre-war system could not handle. Little is known, however, about either the changes or the installations.

a. Organization of the radio system.

(1) Broadcasting.

(a) Broadcasting stations. The most important stations in Yugoslavia are the three short-wave and one medium-wave stations in the vicinity of Beograd, in Serbia. Croatia has two medium-wave transmitters at Zagreb, two at Sarajevo, one at Banja Luka, and projected stations (some of which may have been completed) at Dubrovnik, Jajce, Mostar, Osijek, Tuzla, and Visegrad.[1] In the zones annexed or dominated until recently by Italy (and now apparently being fought for by the Germans and guerrillas) are the medium-wave stations at Cetinje (Montenegro), Ljubljana (Slovenia), and Pristina and Prizren

(incorporated into Albania). In the zone assigned to Bulgaria there is a medium-wave transmitter at Skoplje. Detailed information on these stations is shown in the Table VII-1.

(b) Administration. Before the war, the three medium-wave stations then existing (at Beograd, Zagreb, and Ljubljana) were operated by concessionaire companies under government regulation, while the two Beograd short-wave stations were operated by the Communications Ministry.[1]

Following the invasion of 1941 the Germans and Italians assumed real control of all radio facilities, although the Croatian, Bulgarian, and Hungarian authorities were given nominal control over the installations in their respective zones. It is known that the Germans have been using the Beograd short-wave transmitters to transmit the "Kurzwellensender Lilli Marlen" programs to the German Army, and ~~that~~ the "Radio Metropole" broadcasts in English, French, and Russian, as well as the "Velebit" programs in Croatian.[2]

(c) Reception. In January 1941 there were reported to be about 174,000 receiving sets in Yugoslavia,[3] or roughly one set to every 90 persons. Recent German reports state that in February 1943 there were 75,361 sets in the puppet state of Croatia, or one to every [illegible] persons; this constitutes an increase of 20,19[illegible] over the number registered in February 1942.[4] Many of these sets

are concentrated in the larger cities. The Axis has promoted the importation of sets and the installation of loudspeakers in public places.

The Germans, Italians, and local authorities have encouraged listening to Axis broadcasts but have made listening to other programs unlawful. In Zemun all set-owners were required to surrender all sets to the P.T.T. office for the removal of short-wave receiving equipment,[5] and it is probable that similar attempts to prevent short-wave listening have been made elsewhere.

These measures do not, of course, discourage anti-Axis stations from broadcasting in the Yugoslav language. At least six clandestine stations are reported. "Croat Freedom (Zrinski)" broadcasts to the Croats; "KaradjÖrdje", "Yugoslav People's Radio" and "Serbian Freedom (Shumadia)" to the Serbs; "Za Stara Pravdo" to Slovenes, and the "Free (Slobodna) Yugoslavia" Partisan station to all groups. No information on the location of these transmitters is available, although the Partisan station is suspected by one source to be in Russia. In addition, British, American, German, and Italian transmitters have directed programs to listeners in Yugoslavia.[2,6]

(2) Point-to-point communication, long- and short-wave.

The point-to-point stations known to exist in Yugoslavia are the following:

In Serbia, five in the Beograd area, one at Nis.

In Croatia, three at Zagreb, one each at Sarajevo and Banja Luka.

In the territories under the recent control of Italy, one each at Cetinje, Krcegnovi, and Kotor (Montenegro), Drnis and Split (Dalmatia), Ljubljana (Slovenia), and Zara (Italian enclave in pre-war Yugoslavia).

In the area annexed to Bulgaria, two at Skoplje.

In the territory annexed to Hungary, one at Novi Sad.

As with the broadcasting facilities, the point-to-point stations are under effective German control, except in areas held by the guerrillas. Before the war, all such facilities were state-c d.

(3) Communication with aircraft. Before the war, aeronautical radio and direction-finder equipment existed at the airfields of Beograd-Zemun, Mostar, Sarajevo, Skoplje, and Zagreb. All of these stations transmitted on 260,268,280,325,333.3 and 336 kc. and received on frequencies between 100 and 1,000 kc. The Beograd field also had short-wave equipment, transmitting on 5660 and 5332 kc. and receiving on 1200-22, 225 kc. All but the Beograd and Mostar stations used only radio-telegraphic equipment.[1]

There is no indication that these operating methods are still being used by the pre-war radio stations or that they have been adopted by the stations installed since that time. It is probable that facilities have been adapted to the operational methods of the Axis authorities using them.

The airfields at which radio facilities have been reported recently are those at:

Serbia:	Beograd (Pancevo) Bela Crkva Nis (Medosevac)	Croatia:	Zagreb (Stupnik) Banja Luka Borovo (Vukovar) Dubrovnik (Gruda)

Areas dominated by Italy:	Denovici Ljubljana Podgorica Split Susak Zara	Area annexed to Hungary:	Novi Sad

(4) Communication with ships. Coastal stations, which before the war usually handled meteorological bulletins, navigational warnings, distress signals and medical advice, are located at Alinžci, Sibenik and Zara in the territory under Italian control. There are also two radio beacons at Zara.[1,7] These facilities, formerly operated by the Yugoslavian Navy, are presumably now in the hands of the occupying forces. Whether their equipment is being used is not known.

b. Stations. (See Fig. VII-1). Details of the stations are shown in Table VII-1.

Table VII-1

Abbreviations:

BC - Broadcasting
FX - Point-to-point
FA - Communicates with aircraft
FC - Communicates with ships
D/F - Aeronautical direction-finder
RB - Maritime radiobeacon
S - Short-wave
M - Medium-wave
L - Long-wave
A1 - pure continuous telegraphy
A2 - modulated continuous telegraphy
A3 - telephony
B - damped waves

W. - watts
Kw. - kilowatts
kc. - kilocycles
* - projected station

To transform kilocycles (frequency) into metres (wave-length), or vice versa, divide 300,000 by the known figure

Town, Station Name, Call Sign	Function, type of emission	Co-ordinates[1] (of transmitter) Locational data	Frequencies[1] (kc.)	Power in Antenna[1]	Remarks
Banja Luka --	BC-M	-- --	1086 kc.*	200 w. Transmitter probably now replaced by transmitter of 3 or 4 kw.[1,14]	--
Banja Luka, YTL-10[1]	FX-S; A1	44 46 53 N. 17 11 05 E	--	2354.7 3432.4 4709.5 6864.9	20 w. Another report gives 150 w.[8]
Banja Luka Landing Ground[13]	FA	44 48 N. 17 13 E. (L.G.)	1.7 mi. NNE. of Banja Luka	--	--
Bela Crkva[13] Bela Crkva Airdrome	FA	44 53 N. 21 25 E. (Airfield)	1 mi. SSW of Bela Crkva, on N. bank of River Jurga.	--	--

Town, Station Name, Call Sign	Function, type of emission	Co-ordinates (of transmitter) ° ' "	Locational data	Frequencies (kc)	Power in Antenna	Remarks
Beograd						
Beograd I	BC-M	44 45 42 N. 20 21 59 E.	Transmitter about 4 miles SW of center of Beograd in Makis, 2 mi. WNW of Zarkovo railway station. Studio in Poenkarcova Ulica.[8]	686 Recently also on 922.[10]	20 kw.	2 lattice masts 328 ft. high, 560 ft. apart. Marconi equipment. May also be 2 kw transmitter at same location.
Beograd II, YUB-G	BC-S	44 52 28 N. 20 20 57 E.	Transmitter in Zemun, across Sava River from Beograd. Studio probably in offices of Central Press Bureau, Mitos Veliki 14, Beograd.[9]	YUB-6100 YUC-9505 YUD-[illegible] YUE-11735 YUF-15240 YUG-15240 (See also frequencies of German station, below).	10 kw.	Probably carries some of German-sponsored programs. Frequencies here listed are subject to change.
Beograd II, YUA	BC-S	44 48 46 N. 20 26 -- E.	Transmitter probably at office of Post and Telegraph Administration. Studio probably same as above.[9]	6100	1 kw.	Equipment of domestic construction.[9]
--	BC-S	--	May be at Banjica, S. of Beograd.[11]	Frequencies of German programs transmitted by the Beograd shortwave transmitters: 705, 6100, 7435, 9440, 9505, 11735, 11925.[2]	20 kw.	Germans reported to have built a powerful station near Beograd for transmitting propaganda to Balkans and Middle East.[12] No details are available. One transmitter has a power of 20 kw., but there may be more powerful equipment. Probably this station handles the "Kurzwellen sender Lilli Marlen" broadcasts to the German Army, the "Radio Metropole" broadcasts in English, French, and Russian, and the "Velebit" broadcasts in Croatian, although the older transmitters may share these tasks. Frequencies here listed are subject to change.[2]

Town, Station Name, Call Sign	Function, type of emission	Co-ordinates (of transmitter) ° ' "	Locational data	Frequencies (kc.)	Power in Antenna	Remarks
Beograd (contd)						
Beograd-Makovica, YTA-E, YTB-N	FX-S,L: A1 A2	44 44 40 N. 20 27 30 E.8	On N side of wood of Makovica, which is about 5 miles SSE of Beograd.8	YTA-26.09 YTB-86.02,86.65 YTE-4138 YTN-4580 YTI-7445 YTD-9145 YTC-13150	25 kw. 2 kw. 750 kw. 100 100 w. 100 w. 100 w.	Not to be confused with the so-called "short-wave station of the Independent Croatian State, Makovica," which was the title of a series of Rome broadcasts in Croatian.2 Plant supplied by French Cie. Generale de T.S.F., which was pre-war part owner. Reported to have 5 masts. Transmitter linked by telegraph and telephone lines to the Central PTT Office at Takovska Ulica 2, Beograd. Receiving station at Vel. Vracar, about 5/8 mi. W of cemetery (44 28 23 N., 20 30 00 E.). Also installed by Cie Gen. T.S.F.; connected with central office.8
Beograd-Avala, YTF1	FX-S; A2	44 48 33 N. 20 28 07 E.	At Avala, just south of Beograd.	3225.8 5310.	800 w.	--
Beograd-Zemun, YTL1	FX-S; A1	44 50 44 N. 20 22 48 E.	At Zemun, across Sava River from Beograd.	2380.95 3488.37 4761. 4781. 6976.74	250 w. " 20 w. 250 w. "	--
Beograd:YYC1	FX-S; A1 A2	44 48 31 N. 20 28 05 E.	--	2707 6976.74	250 w.	--
Beograd:YTL-21	FX-S;A1	44 48 32 N. 20 30 56 E.	--	2343 3409 4687 6818	150 w.	--
Beograd-Zemun (Semlin) Airdrome, YTW1,13	FA, D/F-L,S; A1 A2 A3	Tr. 44 48 32 N. 20 22 02 E. Rec. 44 48 21 N. 20 24 20 E.	2.9 miles W. of Beograd, 1.9 mi. S. of Zemun.13	--	L-1.5 kw. S-150 w.	Probably the largest airport in Balkans. Aeronautical radio-beacon also reported.13
Beograd-Pancevo Airdrome13	FA	44 55 N. 20 42 E. (Airfield)	About 10 miles ENE. of Beograd, 3½ mi. NE. of Pancevo.	--	--	--

Town, Station Name, Call Sign	Function, type of emission	Co-ordinates (of transmitter) o ' "	Locational data	Frequencies (kc.)	Power in Antenna	Remarks
Borovo						
Borovo (Vukovar) Landing Ground[13]	FA	45 24 N. 18 58 E. (L.G.)	1.4 mi. SSW. of Borovo; 3 mi. NW. of Vukovar on N. bank of Danube.	--	--	--
Cetinje						
--	BC-probably M	--	--	--	--	Probably recently completed. Carries broadcasts in Albanian.[15]
Cetinje, YTL-5[1]	FX-S; A1	42 23 10 N. 18 53 24 E.	--	2365 3456 6912	20 w.	--
Drnis						
--	Probably FX	43 51 20 N. 16 11 40 E.	About 1 mi. SE. of Drnis railway station.	--	--	Military. 3 masts of medium height, clearly visible from the railway station. 2 wooden barracks beside central mast.[6]
Dubrovnik						
--	BC M	--	Probably in Gruz (Dubrovnik II)[14]	1420*	200 w.	May already be in operation.[14]
Gruda Landing Ground[13]	FA	42 32 N. 18 21 E. (L.G.)	1.7 mi. WNW. of Gruda; 1/4 mi. SE. of Dubrovnik.	--	--	--
Jajce						
--	BC*	--	--	1429*	200 w.*	*
Gulf of Kotor Area						
Klinci, YTK	Probably FC; A1 A2 A3	42 25 20 N. 18 33 58 E.[8]	About 1 mile SSE. of Port Rose.[8]	438 500	3 kw.	Naval station. Trellis mast 290 ft. high, visible from seaward. Nearby are huts for personnel and generating plant. Connected with Headquarters Command at Hercegnovi by one telegraph and two telephone lines via Kumbir, and also with Port Rose.[11]

Town, Station Name, Call Sign	Function, type of emission	Co-ordinates (of transmitter) o ' "	Locational data	Frequencies (kc.)	Power in Antenna	Remarks
Gulf of Kotor Area (contd)						
-- 11/	Probably FX	--	At Hercegnovi	--	--	Small civil station reported, no details
-- 11/	Probably FX	--	At Kotor	--	--	" " " "
Denovici, Seaplane station	Probably FA	42 26 15 N 18 35 52 E	At Naval Air Base, on Denovici Point, on north shore of Kumbur Channel. 9 mi. WNW. of Kotor. 11/ Equipment housed in an office on the E. end of engine-testing house in the SW corner of the seaplane station 8/	--	--	Naval Air Base's reported small station, function unknown.
Ljubljana						
Radio-Ljubljana BC-M		46 07 30 N. 14 35 00 E	Transmitter reported in the center of parkland about 3/4 mi. out of Domzale, which is 6 mi. NE of Ljubljana. Studio at Bleiweisova 54, Ljubljana. 8/	527 kc.	5.25 kw. 20 kw transmitter may be installed 8	May also have point-to-point communication equipment. Installed by Telefunken Co 2 lattice masts about 390 ft. high and 650 ft. apart. Single-storied wooden station building stands between masts connected with studio by landline. 8/
Ljubljana, YTL-7 1/	FX-S; A1	46 03 44 N. 14 30 46 E.	--	2377.1 3480.2 4754.3 6960.5	60 w.	--
Ljubljana Landing Ground 13/	FA	46 04 N. 14 33 E. (L.G.)	2.2 mi. E. of Ljubljana on R. side of R.R.	--	--	--

Town, Station Name Call Sign	Function type of emission	Co-ordinates (of transmitter) ° ' "	Locational data	Frequencies (kc.)	Power in Antenna	Remarks
Mostar						
--	BC-M*	--	--	1429*	200 w.*	*
Mostar Airdrome, YTI 1,13/	FA, D/F-L;A1A3	Tr. 43 19 12 N. 17 50 09 E. Rec. 43 17 23 N. 17 49 43 E.	2.4 mi. S. of Mostar, W. of river.	--	1.5 kw.	May also have radio beacon facilities. Mostar-Kosar airdrome, 5 mi. SSE. of Mostar, also reported to have radio, but may share these facilities.
Niš						
Niš, YTL-11 1/	FX-S; A1	43 19 24 N. 21 55 25 E.	--	2347.4 3416.8 4694.8 6833.6	20 w.	*A plan to erect a long-wave station reported in 1940. 11/
Niš-Medosevac Airdrome 13/	FA	43 20 N. 21 52 E. (Airfield)	2 mi. NW. of Niš.	--	--	The Drazevac (Toponica) airdrome, 8 mi. NW. of Niš, may also have radio, or share these facilities. 13/
Novi Sad						
Novi Sad, YTL-9 1/	FX-S; A1	45 14 33 N. 19 53 17 E.	--	2370 3448.2 4739.3 6896.5	100 w.	--
Novi Sad Airdrome 13/	FA	45 16 N. 19 48 E. (Airfield)	On NW. edge of Novi Sad.	--	--	--
Osijek						
-- 1/	BC-M*	--	--	240*	200 w.* Elsewhere listed as 20 kw. 8/	*

Town, Station Name, Call Sign	Function, type of emission	Co-ordinates (of transmitter) o ' "	Locational data	Frequencies (kc.)	Power in Antenna	Remarks
Podgorica						
Podgorica Airdrome [13]	FA	42 26 N. 19 17 E. (Airfield)	1 mi. SE. of Podgorica	--	--	--
Pristina						
Radio Kosova [15,16]	BC-probably M	--	--	--	--	Inaugurated in the summer of 1942; broadcasts in Albanian. [15,16]
Prizren						
--	BC-M	--	--	--	--	A low-power BC station, reported under construction in 1942. Was intended to broadcast programs in Albanian. [2,15]
Sarajevo						
Sarajevo I	BC-M	--	One or both of these may be at Raljovak, W. of Sarajevo.	1429*	200 w.	*One of these stations has been reported as broadcasting three times daily on 1086 kc. (temporary frequency), audible for about 60 mi. [14] Also reported on 1240 kc. [2]
Sarajevo II	BC-M	--		1348*	100 w.*	
Sarajevo, YTL-8 [1]	FX-S; A1	43 52 30 N. 18 26 35 E.	--	2362.1 3464.2 4724.3 6928.4	100 w.	--
Sarajevo-Raljovak Airdrome, YTU [1,13]	FA, D/F; A1 A2	Tr. 43 52 03 N. 18 18 53 E. Rec. 43 51 26 N. 18 18 45 E.	5.6 mi. W. of Sarajevo. [13]	--	700 w.	--
Sibenik						
Sibenik, YTS	FC-M(probably also S); A1 A2 A3 [8]	43 43 18 N. 15 54 20 E. [8]	At the head of Fornasa Cove, in rear of training establishments at Mandalina, at S. end of harbor. [8,11]	468.470, 500 [7]	3 kw.	Naval station; has 5 aerials, one or two of which are probably shortwave. One steel lattice mast, [8] in front of a large rectangular 2-story building. Reported gas- and bomb-proof; fitted with German apparatus. Appears to be of very modern construction. [11]
--	--	--	About 5/8 mi. along coast from S. Andrija Channel [8]	--	--	--

Town, Station Name, Call Sign	Function, type of emission	Co-ordinates (of transmitter) ° ' "	Locational data	Frequencies (kc.)	Power in Antenna	Remarks
Skoplje						
--	BC	--	Near Dusanovac about 3 mi. E. of Skoplje 8/	704	20 kw.	Recently completed. 2 masts. 8/
Skoplje, YTL-6 1/	FX-S; A1	42 01 21 N. 21 27 07 E.	--	2373 3472 4746 6944	20 w.	--
Skoplje Airdrome, YTV 1 13/	FA D/F; A1 A2	Tr 41 58 47 N. 21 28 12 E. Rec. 41 58 52 N. 21 28 14 E.	Airfield 1 mi. SE. of Skoplje, on S. side of Vardar River. 13/	--	700 w.	May also have radio beacon facilities.
SLK (?) 17/	Probably FX	--	--	--	--	Recent installation of a German station reported. May be the transmitter reported installed in a house near the National Theatre, with 15 German personnel. 18/
Split						
Split Seaplane Station	FA	43 32 N. 16 18 E. (Seaplane Station)	On W. end of hangars at Naval Air Base, which is at Divulge on Tragir (Tarske) Pt. on N. shore of Kastel Channel, 16½ mi. by road from Split, 6½ mi. W. by sea. 8,11/	--	--	2 lattice masts about 120 ft. high. Equipment of Naval Air Base. 11/
Split, YTL-4 1/	FX-S; A1	43 30 26 N. 16 26 33 E.	On SE. slopes near summit of Mt. Margan, which is due E. of Split, overlooking the entrance of the channel. 11/	2358 3440 4716 6880	20 w.	--

Town, Station Name, Call Sign	Function type of emission	Co-ordinates (of transmitter) ° ' "	Locational data	Frequencies (kc.)	Power in Antenna	Remarks
Split (contd)	BC-M*	--	--	--	1 kw.*	A transmitter for Split was allocated 1 kw. in the 1939 Montreux Agreement, but may never have been erected. 3/
Susak Susak Landing Ground 13/	FA	45 23 N. 14 31 E. (L.G.)	4.3 mi. NE. of Susak.	--	--	--
Tuzla -- 1/	BC-M*	--	--	1429*	200 w.*	*
Visegrad -- 1/	BC-M*	--	--	1429*	200 w.*	
Zagreb Radio Zagreb	BC-M	45 49 02 N. 15 58 28 E.	8/ Transmitter and studio reported to be at Trg Stjepana Radica 9, near St. Mark's on the highest hill in town. 8/ Another report says transmitter is 1½ mi. from center of town. 9/	1086 kc.	Formerly 750 w., may now be 2 kw.	Antenna 161 ft. above ground. Probably Siemens equipment. 8/
--	BC-M	45 47 00 N. 15 59 28 E.	--	629	Now 10 kw; 120 kw. transmitter reported under construction. 1,3/	--
Zagreb-Velika Gorica, YTZ	FX-L, S; A1	45 42 40 N. 16 03 20 E.	8/ On N. side of road from Zagreb rr. station to Velika Gorica, which is 6 3/4 mi. SE. of the center of Zagreb. 8/	55.72 86.26 3200	3 kw.	--
Zagreb, YTP 1/	FX-S; A1 A2	45 49 07 N. 15 59 30 E.	--	4687 5362	250 w., 1.2 kw.	--

Town, Station Name, Call Sign	Function, type of emission	Co-ordinates (of transmitter) ° ' "	Locational data	Frequencies (kc.)	Power in Antenna	Remarks
Zagreb (contd)						
Zagreb, YTI-3 1/	FX-S; A1	45 48 49 N. 15 58 52 E.	--	2351 3424 4702 6849	150 w.	--
Zagreb Airdrome, YTY	FA D/F; A1 A2	Tr. 45 48 25 N. 16 01 20 E.				
		Rec. 45 48 43 N. 16 02 53 E.	2.5 mi. ENE of Zagreb 13/	--	700 w.	--
Zagreb-Stupnik Airdrome 13/	FA	45 45 N. 15 52 E. (Airfield)	6 mi. WSW. of Zagreb	--	--	New German field, likely to have complete radio equipment 13/
Zara Zara Radio IQO 1/	FC; A1 A2. B 1/	44 07 06 N. 15 13 26 E.	Probably near the north end of the peninsula on which Zara is located. 19/	418.500	1 kw.	Probably the FC and FX functions are both performed with the same equipment, operated by the Italian Navy. Two masts observed. 19/
IQO 1/	FX-L; A1	Probably same as above.	Probably same as above.	191.1	1.2 kw.	" "
IQP 1/	FX-S; A1	"	" "	4839	1 kw.	" "
-- 1/	RB; A2	44 07 06 N. 15 13 26 E.	--	300	--	Circular RB; signal CH; range 100 naut. mi.
Punta Amica Light Station 1/	RB; A2	44 07 52 N. 15 12 18 E.	--	312.5	--	Signal ZA. Temporarily discontinued in 1939; not known if now operating.
-- 1/	FA; A1	44 07 20 N. 15 04 00 E.	--	Tr. 336 Rec. 333	100 w.	--